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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,126	10/28/2003	Richard L. Antrim	006401.00433	6117
22908 7590 11/17/2008 BANNER & WITCOFF, LTD. TEN SOUTH WACKER DRIVE SUITE 3000 CHICAGO, IL 60606				
EXAMINER HANLEY, SUSAN MARIE				
ART UNIT		PAPER NUMBER		
1651				
MAIL DATE		DELIVERY MODE		
11/17/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/695,126

**Applicant(s)**

ANTRIM ET AL.

**Examiner**

SUSAN HANLEY

**Art Unit**

1651

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

Claim 1-4 are pending and under examination.

#### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 3 and 4 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Boskovic et al. (US 5,124,162) in view of Tang et al. (US 5,854,487) and Rohrbach et al. (US 4,511,654).

Applicant asserts that Rohrbach teaches away from any use of the dextrans of the invention and is directed to making a permeate with a high glucose or maltose content. Applicant argues that Rohrbach teaches the undesirability of the dextrans of larger molecular weight than maltose of the invention and that the reference teaches away from the invention and from the combination with Boskovic.

Applicant argues that Tang does not overcome the deficiencies of Rohrbach or Boskovic and that the teachings of Tang are contrary to the invention because Tang is concerned with a non-retrograding material that is contrary to the use of ultrafiltration to remove retrograded amylose. Applicant concludes that unlike the retrograded amylose that is formed and removed, Tang seeks to avoid formation of retrograded materials.

Applicant concludes that there is no motivation to combine the three references because the references diverge, and when combined, do not result in the claimed method of the invention.

Responding to Applicant's argument that Rohrbach teaches away from the use of any dextrans and that the permeate should contain high glucose or maltose content, Rohrbach discloses a method of making a permeate having a DP that is adjustable by the ordinary artisan. Rohrbach may exemplify permeates with high glucose or maltose content but he clearly demonstrates that the DP of the permeate is adjustable. At column 10, Rohrbach discloses filtered products having 9.7% DP3 oligosaccharide and 0.2% of a DP9+ oligosaccharide. Hence the total DP is 9.9% ( col. 10, lines 32-36) meets the range limitation recited by claim 1. Rohrbach further teaches the adjustment of alpha-amylase (col.3, lines 42-47) to adjust the DE of the pre-beta-amylase hydrolyzed slurry to about 5-25. The examples employ an alpha-amylase adjusted slurry having a DE of 15. In Ex. III, Rohrbach discloses that the DE of the alpha-amylase adjusted slurry can be adjusted according to the desired level (col. 10, lines 5-7). Therefore, Rohrbach clearly teaches that maltodextrin products having a DP up to a value of 10, as claimed in the instant invention, can be produced by his method.

Responding to Applicant's argument that Tang is contrary to the invention because said reference seeks to avoid the formation of retrograded materials and is contrary to the use of ultrafiltration to remove retrograded amylose, Tang discloses that it is desirable to employ nanofiltration to enzyme- or acid-hydrozylates of starch to remove retrograded amylose an to obtain a low DE hydrozylate blend. Such products

are substantially retrograde-product free and have a very low viscosity. Low DE products that lack retrograded amylose are particularly suited for spray-drying (abstract and col. 3, lines 63-68 to col. 4, lines 1-13).

Responding to Applicant's conclusion that a prima facie case has not be made, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ a low DE starch that has been hydrolyzed by alpha-amylase and beta-amylase followed by the filtration of retrograded amylose as a carrier for spray-drying maltose containing products. The ordinary artisan would have been motivated to do so because Tang specifically recommends that enzyme-hydrolyzed starch which have been subjected to retrograded amylose removal are very desirable for spray drying due to their very low viscosity. The ordinary artisan would have had a reasonable expectation that the method of producing a maltodextrin according to Rohrbach (e.g., treatment of starch by alpha-amylase and beta-amylase followed by the filtration of retrograded amylose) would suit the spray-drying method disclosed by Boskovic because it has reduced retrograded amylose content as recommend by Tang and has a DE at least less than 25% that can be adjusted as needed according to Rohrbach.

Claims 1, 2 and 4 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Kaper et al. (US 4,780,149) and Rohrbach et al. (US 4,511,654).

Applicant argues that Kaper does not teach the removal of any portion of the retrograded amylose and that the material of Kaper appears to be different from

the dextrin specified in the pending claims. Applicants the rejection is further deficient in combination with Rohrbach because Rohrbach teaches the undesirability of high molecular weight dextrans other than maltose, a disaccharide (DP 2) of low molecular weight. Applicant asserts that these references may be considered together only in hindsight and the combined references would not yield the dextrin from which at least some retrograded amylase had been removed.

Responding to Applicant's arguments, Kaper does not teach that the retrograded amylose is removed by ultrafiltration. However, Kaper teaches the removal of retrograded amylose by precipitation via centrifuge or filtration (Kaper discloses the preparation of a maltose/  $\beta$  -limit dextrin composition by contacting starch with  $\beta$ -amylase, followed by  $\alpha$ -amylase treatment, and precipitation of the retrograded amylose and separation from the  $\beta$ -dextrin/maltose-containing solution by centrifugation or filtration. See column 1, lines 44-52; and in particular column 3, lines 1-25 discussing the embodiment wherein the precipitated amylose is removed from the dextrin and maltose-containing solution).

Rohrbach discloses that another method for the removal of retrograded amylose by the ultrafiltration step (see Ex. III at col. 10, lines 1-44). Hence, ultrafiltration is an equivalent alternative method compared to centrifugation for the removal of retrograded amylose for starch hydrozylates. Ultrafiltration is also a specie of filtration. Regarding the alleged teach away from dextrin formation by Rohrbach, Rohrbach clearly teaches that maltodextrin products having a DP up to a value of 10, as claimed in the instant invention, can be produced by his method. Hence, the prior art methods are related.

Thus, in response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SUSAN HANLEY whose telephone number is (571)272-2508. The examiner can normally be reached on M-F 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Wityshyn can be reached on 571-272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Susan Hanley/  
Examiner, Art Unit 1651

/Sandra Saucier/  
Primary Examiner, Art Unit 1651